

## CLAIMS

1. A liquid jetting apparatus to jet a droplet of a charged liquid solution onto a base material, comprising:

a liquid jetting head comprising a nozzle to jet the droplet from an edge portion, an inside diameter of the edge portion of the nozzle being not more than 30[  $\mu\text{m}$  ] ;

a liquid solution supplying section to supply the liquid solution into the nozzle; and

a jetting voltage applying section to apply a jetting voltage to the liquid solution in the nozzle,

wherein an inside passage length of the nozzle is set to at least not less than ten times of the inside diameter of the nozzle at the nozzle edge portion.

2. The liquid jetting apparatus of claim 1, wherein the inside passage length of the nozzle is set to at least not less than 50 times of the inside diameter of the nozzle at the nozzle edge portion.

3. The liquid jetting apparatus of claim 1, wherein the inside passage length of the nozzle is set to at least not less than 100 times of the inside diameter of the nozzle at the nozzle edge portion.

4. The liquid jetting apparatus of any one of claims 1 to 3, wherein a wall thickness of the nozzle at the nozzle edge portion is set to not more than a length

equal to the inside diameter of the nozzle at the edge portion of the nozzle.

5. The liquid jetting apparatus of claim 4, wherein the wall thickness of the nozzle at the edge portion of the nozzle is set to not more than  $1/4$  of the length equal to the inside diameter of the nozzle at the nozzle edge portion.

6. The liquid jetting apparatus of any one of claims 1 to 5, wherein at least the edge portion of a surface of the nozzle is subjected to a water repellent processing.

7. The liquid jetting apparatus of any one of claims 1 to 6, wherein an edge surface of the nozzle comprises an inclined surface with respect to a centerline of the in-nozzle passage.

8. The liquid jetting apparatus of claim 7, wherein an inclination angle of the edge surface of the nozzle is set to be in a range of 30 to 45 degrees (when a state in which a normal line of the inclined surface is parallel to the centerline of the in-nozzle passage is defined as 90 degrees).

9. The liquid jetting apparatus of any one of claims 1 to 8, wherein the inside diameter of the nozzle is less than  $20[\mu\text{m}]$ .

10. The liquid jetting apparatus of claim 9, wherein the inside diameter of the nozzle is not more than  $10[\mu\text{m}]$ .

11. The liquid jetting apparatus of claim 10, wherein

the inside diameter of the nozzle is not more than 8[  $\mu\text{m}$  ] .

12. The liquid jetting apparatus of claim 11, wherein the inside diameter of the nozzle is not more than 4[  $\mu\text{m}$  ] .

13. The liquid jetting apparatus of any one of claims 1 to 12, wherein a jetting electrode of the jetting voltage applying section is provided on a back end portion side of the nozzle.